

THE ACADIAN SHARP-TAILED SPARROWS OF POPHAM BEACH, MAINE

BY WILLIAM MONTAGNA

SINCE the Acadian Sharp-tailed Sparrow, *Ammospiza caudacuta subvirgata* (Dwight), was originally described in 1887, comparatively little work has been done with it.

In June, 1939, I made a collecting trip to Popham Beach, Sagadahoc County, Maine. Popham Beach, which is a part of the town of Phippsburg, is situated at the mouth of the Kennebec River. Acadian Sharp-tailed Sparrows have been known for years to nest in the salt marsh which extends from the mouth of Morse's River to the head of Atkin's Bay. It was in these very marshes that Norton (1927) found and described their nest.

HABITS

One of the primary purposes of the trip was to secure some specimens of these birds in fresh spring plumage. Arriving at Popham Beach on June 9, I lost no time in visiting the marsh that afternoon in company with Ralph S. Palmer, who had been at Popham Beach throughout the summer of 1938 and was there for the entire summer of 1939. Although Palmer assured me that the birds must be all around us, we failed, in spite of a laborious search, to see or hear a single Sharp-tailed Sparrow. Early the next morning, however, I returned to the marsh. This time male birds were heard everywhere. Many were engaged in song flights, while others, perched on long blades of grass, sang at short intervals. Beneath some of these song perches were large amounts of droppings indicating that they had been used regularly. Norton (1897 and 1927) made similar observations. On several occasions, shortly after they had been frightened away, male birds returned to their original perch to perform.

The song flight of the males is a peculiar antic which was well described by Dwight (1887): "Sometimes he springs up into the air, particularly towards evening, and setting his wings floats down into the grass fairly gushing with song—such as it is." My observation, however did not agree with Dwight's restriction, "particularly towards evening." H. F. Lewis (1920) has also described this flight song in somewhat more detail. The sparrows I observed at Popham Beach showed little if any tendency to sing in the evening. During the morning hours they performed these antics again and again; often seven or eight males were in the air at the same time, and only a short distance from each other. As noon approached, the performances became less frequent and usually ceased toward the middle of the afternoon. On one occasion a bird was heard singing in the evening. Palmer heard

the birds singing heartily throughout the breeding season, as late as July 25. Singing then diminished, and on August 14, 1938, one last song was heard.

On June 10 two males and one female were collected. The birds had swollen cloacas and the gonads were greatly enlarged. In the female one of the follicles of the ovary was about to burst, and a nearly mature egg was in the oviduct. This female had a large brood-patch, but it was not swollen and watery; evidently the bird was not yet incubating. This specimen was collected after it had flown away from a tangle of three other birds, presumably males, which were crowding over it, attempting to copulate. On June 11 three males were collected with one shot while they were in a curious tangle such as described above. A fourth bird, perhaps a female, flew away unharmed. While going through the marsh I often encountered this peculiar behavior. However, this action was noted only in the morning. At such times the birds were quiet and unaware of one's approach, often flying away only after one had walked within a few feet of them. This habit seems most peculiar, and it may perhaps mean that there are more males than females. I had hoped to collect an even number of males and females, but the number of males taken was much greater. However, females at that time were probably on the nest and difficult to flush.

On June 14 a male descending from the song flight was observed at close range. It alighted not far from me and only one foot away from another bird which I immediately collected. The specimen proved to be a female. Its oviduct contained a full-sized egg and its brood patch was swollen and very watery. On June 15 a male descended from its flight and was seen copulating with another bird. The two were collected and proved to be a pair. The female had one egg with shell in its oviduct and another partly in the shell. Often after the aerial performance the male would join another bird, presumably a female, and together they would fly along the drainage ditches of the marsh. After a short flight they would either engage in copulation or cling to the side of the ditch only a foot or so from each other and a few inches from the level of the tidal water, remaining thus motionless for a considerable time.

Birds were found to be most abundant along the many drainage ditches. These were narrow and often very deep. At low tide the bare sides were exposed, and there the sparrows fed on small aquatic insects. A rough analysis of the crops of specimens collected showed the contents to be exclusively insect matter.

There was no evidence that the males collected had been incubating. Their bellies and breasts were well feathered and showed no indication of a brood-patch. Norton (1897) made similar observations.

These sparrows were unusually quiet, aside from the singing done by the males. Only on rare occasions were they heard uttering soft

notes of alarm. These were short and abrupt and often hardly audible. They could be distinguished with difficulty from the notes of the ubiquitous Savannah Sparrows (*Passerculus sandwichensis*).

PLUMAGE VARIATION

Our series of twenty-one fresh-plumaged breeding birds, plus five specimens from the same locality, which were borrowed from A. H. Norton, show that there is a considerable range of color variation in this race. The backs may vary from a pale grayish olive without conspicuous whitish streaks to brownish black marked with sharp edges of white (Figure 1). The streaking of the breast and flanks is also variable. These streaks are for the most part only faintly indicated



Figure 1. Extremes of dorsal coloration in Acadian Sharp-tailed Sparrows from Popham Beach. (Photograph by Ralph S. Palmer).

by ashy-green markings.¹ However, some of the birds are so sharply marked that they seem to approach *caudacuta*. I am inclined to call these intermediates between *subvirgata* and *caudacuta*. Since the

¹ Such fluctuations of colors occur normally in the races of *Ammospiza caudacuta*. A recently collected series of breeding *A. c. caudacuta* from Tuckerton, Ocean County, New Jersey, shows that the color of the back and head of these birds and the amount of spotting of the breast are quite variable characters.

A.O.U. Checklist and Hellmayr (1938:505) state that *subvirgata* breeds south only to Penobscot Bay, which is about forty miles north of Popham Beach, intermediates are surely to be expected there. A male collected on June 11 (W.M. No. 407) has the tawny breast-band sharply streaked with dark brown, and the markings of the flanks are too heavy for typical *subvirgata*, which has obsolete streaks (Figure 2).

On the morning of June 25 I collected a female which was unusually bright about the head and had well-defined streaks on breast and flanks. On comparing this specimen with material borrowed from the American Museum of Natural History (specimens from Dwight's own

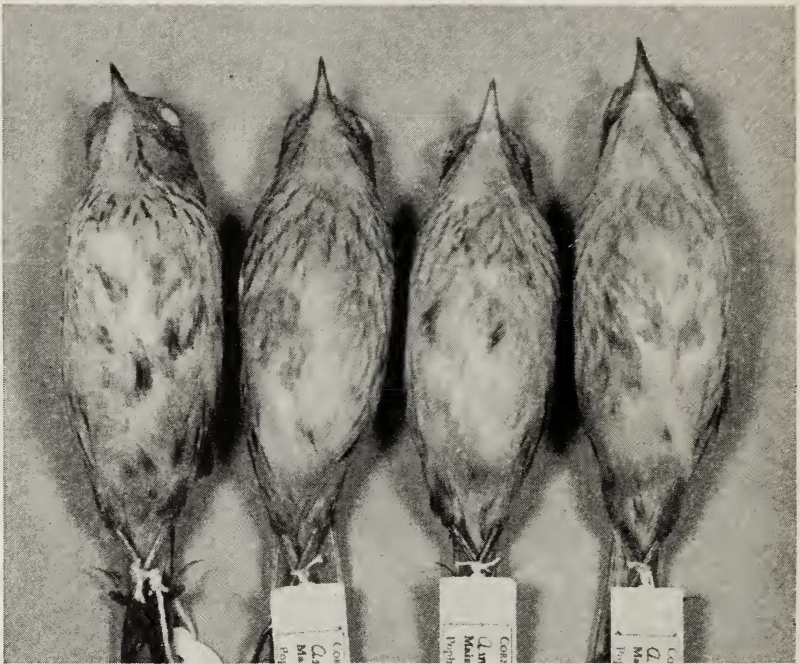


Figure 2. Sharp-tailed Sparrows from Popham Beach. *Ammospiza c. caudacuta* on left; *A. c. subvirgata* on right; two intermediate specimens in center. (Photograph by Ralph S. Palmer).

collection) I found that the bird is unmistakably *A. c. caudacuta* (Gmelin).² Finding this bird in the middle of a colony of *subvirgata*

² Popham Beach is about 35 miles northeast of Scarborough, the bird's previous northernmost range. Dwight writes, "*Ammodramus caudacutus* is restricted in the breeding season to the salt marshes of the Atlantic coast from Virginia to Massachusetts. North of the latter named State, in the limited marshes of New Hampshire and Maine coasts, it is probable that *subvirgatus* would be found. . . . It is obvious therefore that breeding specimens from the Maine coast are greatly to be desired." (Dwight,

is interesting, for it seems probable that the bird was mated with a male of this race. The specimen was unquestionably in breeding condition since the ovary was greatly enlarged and the brood-patch was swollen.

This bird adds more evidence in support of the belief that some of the specimens of *subvirgata* from Popham Beach, although not all, are intermediates. There is little chance that the identity of the specimen is mistaken, for, as Dwight writes, “. . . the palest streaked *caudacutus* in any plumage may be recognized at a glance by being more streaked than any specimen of *subvirgatus*.” (Dwight, 1887: 235.)

In describing the female of *subvirgata*, Dwight (1887:234) writes, “Resembling closely the male, but with richer yellow-buff, orange tinged across the jugulum and about the head and with secondaries, tertials and wing-coverts conspicuously edged with pale russet instead of grayish.” Of the four females I collected on June 11, 14, and 15, two are richly colored with orange-buff about the head, particularly the superciliary and malar stripe, while the other two are dull by contrast. Moreover, males collected on June 10, 11, 14, and 15 are, as a series, as bright as the females. The jugulum is even more highly colored in the males. The four females have, as do the males, the tertiaries definitely margined with white; this character may vary in the males from a definite broad, white margin to a faint, indistinguishable one. The secondaries have a russet margin in the males as well as in the females. The wing-coverts of either sex may or may not have a narrow edge of gray. It must be remembered that the above descriptive remarks are based on birds which appear normal in color. Intermediates were not included. Apparently there is no difference in color between the males and females.

Measurements of the bill, tail, wing, and tarsus show that on the whole males average larger.

TABLE 1
MEASUREMENTS IN GRAMS AND MILLIMETERS OF SHARP-TAILED SPARROWS
FROM POPHAM BEACH

	Weight	Wing	Tail	Bill	Tarsus
Males (21 birds)	17.4-20.9 (18.3)	57-60 (59.4)	49.5-53.9 (51.6)	8-8.5 (8.7)	20-24 (21.9)
Females (5 birds)	16.4-21.2 (18.1)	52.5-56.5 (55.1)	46-49 (48)	8.5-9.1 (8.8)	19.5-22 (20.7)

All of the birds collected were weighed carefully before being prepared. The weights of the sexes are nearly alike. The males average only 0.2 grams heavier. However, the number of females collected is

1896:275.) Norton says, “Though search has now been made, it has not been found farther to the northward than Scarborough, Maine, and the physical structures of the coast are such as to suggest the improbability of the normal range extending beyond this town.” (Norton, 1897:99).

smaller than that of the males, and it is probable that an even number of specimens might give different results. Also, most of these females contained large eggs, and this unquestionably made their average heavier.

Among the specimens borrowed for comparison from the American Museum of Natural History, one female from Dwight's own collection is marked "Like Type." This is a fall specimen, while Dwight's type was a July bird. However, reading the original description, one has the impression that a fall bird is being described, since at that time the "Tertiaries, secondaries and wing-coverts" are "russet, edged like the female in breeding dress." (Dwight, 1887: 234.)

Six males, collected on June 25, had already become very worn in plumage. Their whole aspect is different from that of the birds collected ten days before. The amount of white on the tertiaries is reduced considerably. On July 25, 1938, Palmer collected a series of five males and one female. The plumage of these birds is so abraded that the tertiaries, scapulars, and back feathers no longer have white edges. The birds are brown-backed; even the greenness, which is so typical of fresh *subvirgata*, is almost entirely lost.

SUMMARY

Acadian Sharp-tailed Sparrows were observed singing only during the morning hours; in the afternoon they were quiet and inconspicuous.

Male birds, as many as three, were seen crowding over one female, perhaps attempting to copulate. This may mean that either the population of unmated males was greater than that of available females or that the males had polygamous tendencies. Repeatedly birds were seen copulating immediately after the male's descent from the song flight.

One breeding female *A. c. caudacuta* was taken in a colony of *subvirgata*. Some of the specimens collected prove to be intermediates between *caudacuta* and *subvirgata*.

There is no difference of coloration between the sexes. Plumage variation is described.

The males, although only slightly heavier, average larger in linear measurements than females.

LITERATURE CITED

DWIGHT, JONATHAN, JR.

1887 A New Race of the Sharp-tailed Sparrow. *Auk*, 4:232-39.

1896 The Sharp-tailed Sparrow (*Ammodramus caudacutus*) and Its Geographical Races. *Auk*, 13:271-78.

HELLMAYR, C. E.

1938 Catalogue of Birds of the Americas. *Field Mus. Nat. Hist., Zool. Ser.*, 13, Part 11.

LEWIS, HARRISON F.

1920 Notes on the Acadian Sharp-tailed Sparrow (*Passerherbulus nelsoni subvirgatus*). *Auk*, 37:587-9.

NORTON, ARTHUR H.

1897 The Sharp-tailed Sparrows of Maine. *Proc. Portland Soc. Nat. Hist.*, 2:97-102.

1927 Nesting of the Acadian Sharp-tailed Sparrow (*Passerherbulus nelsoni subvirgatus*) in Maine. *Auk*. 44:568-70.

LABORATORY OF ORNITHOLOGY, DEPARTMENT OF ZOOLOGY, CORNELL UNIVERSITY, ITHACA, NEW YORK

BIRDS OF OREGON. By Ira N. Gabrielson and Stanley G. Jewett. Published by Oregon State College, Corvallis, Oregon, 1940: 6 x 9 in., xxx + 650 pp., 97 pls., 20 figs. in text (maps), colored frontispiece, folded life-zone map. \$4.25.

This book fills a long-standing need for a comprehensive treatment of the birds of Oregon. It is the first general book on the ornithology of that state and as such is admirably complete. Through long experience in the field, the authors are especially well qualified to discuss occurrence, abundance, and habits of species. It is explained in the introduction that the text was written entirely by Gabrielson, but (importantly) a large part of the endless task of checking records and literature was assumed by Jewett.

The illustrations form a prominent part of the work. Besides the colored frontispiece by O. J. Murie, they consist chiefly of high grade photographs by William L. Finley, H. T. Bohlman, Alex Walker, Reed Ferris, and the authors. The scientific value of these would have been increased if localities and dates on which they were taken had been included in the legends. Small maps, run as text figures, assist to clarify distribution of races in certain geographically variable species. The life-zone map is that worked out by Vernon Bailey for his "Mammals of Oregon."

An introductory section of 19 pages is entitled "Something About Birds as a Group." This necessarily sketchy survey is intended for the beginning student. Helpful, and more complete sections on topography and life-zones, and on the history of ornithology in Oregon follow.

As regards systematics, the book is decidedly conservative. It is evident that there is no attempt at systematic revision, although there is much new information about the distribution of races accepted by the A.O.U. Check-list of 1931. Thus, none of the many subspecies described by Oberholser in 1932 from the Warner Valley area are accounted for, except that they are included with the list of birds with type localities in Oregon. Records of distribution are as a rule not included if of date later than 1935, when the manuscript was completed. For example, Jewett's own record (*Condor*, 41, 1939: 85) of the Black Pigeon Hawk in summer at Paulina Lake, east of the Cascade Mountains is not mentioned.

Each species account begins with a description quoted from Mrs. Bailey's "Handbook of Birds of the Western United States." This is followed by a paragraph on distribution, first giving the general distribution, a useful feature, and then that for Oregon. The body of the account includes, in running style, statements about the history of first discovery of the bird in the state, seasonal status, abundance, habitat, nesting, food, and habits as observed in Oregon. Repeated use of the book has convinced the reviewer of its dependability and worth as a reference on distributional matters and as a source for items on natural history.

—ALDEN H. MILLER.